

Fig. 1

# Performance Characteristics

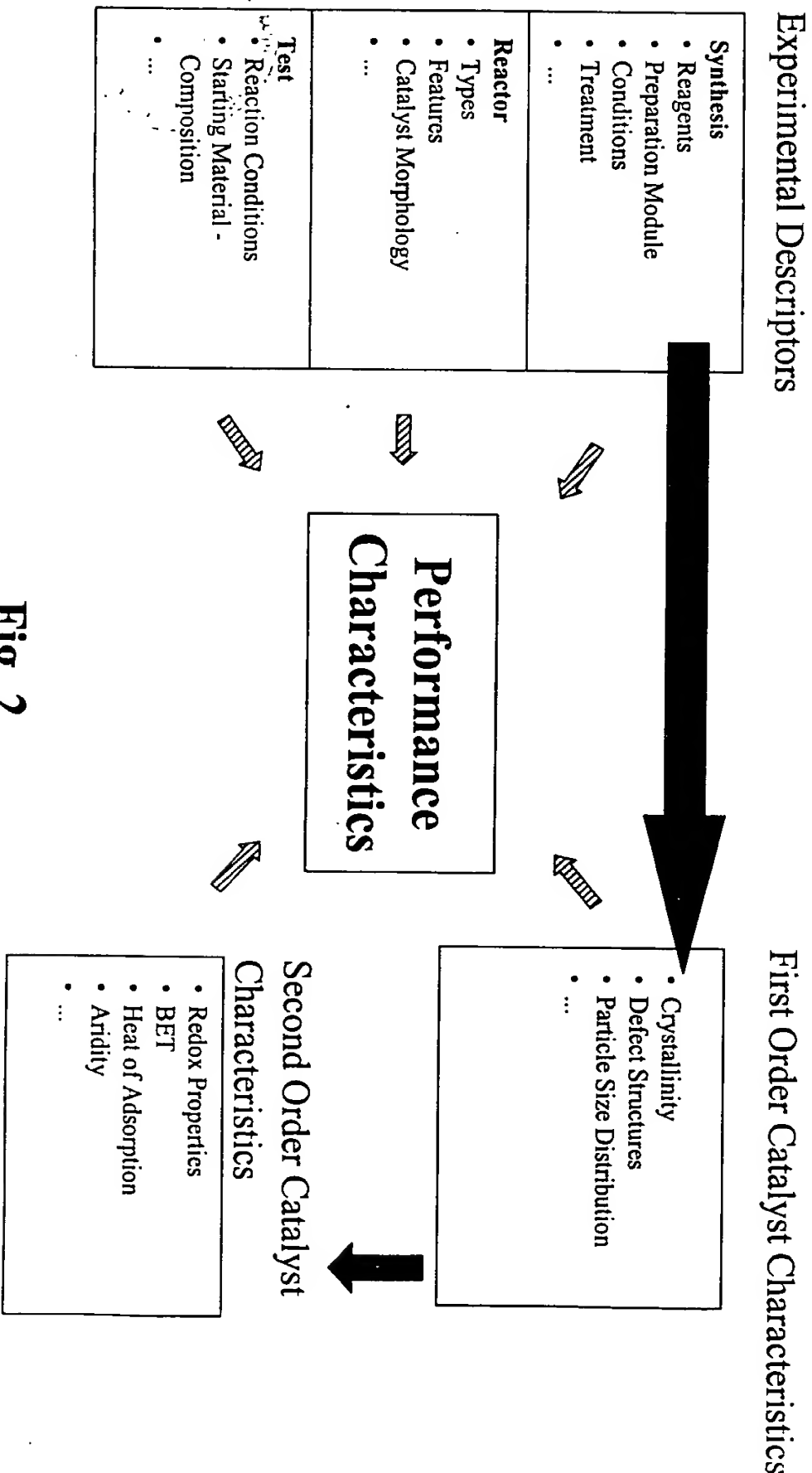


Fig. 2

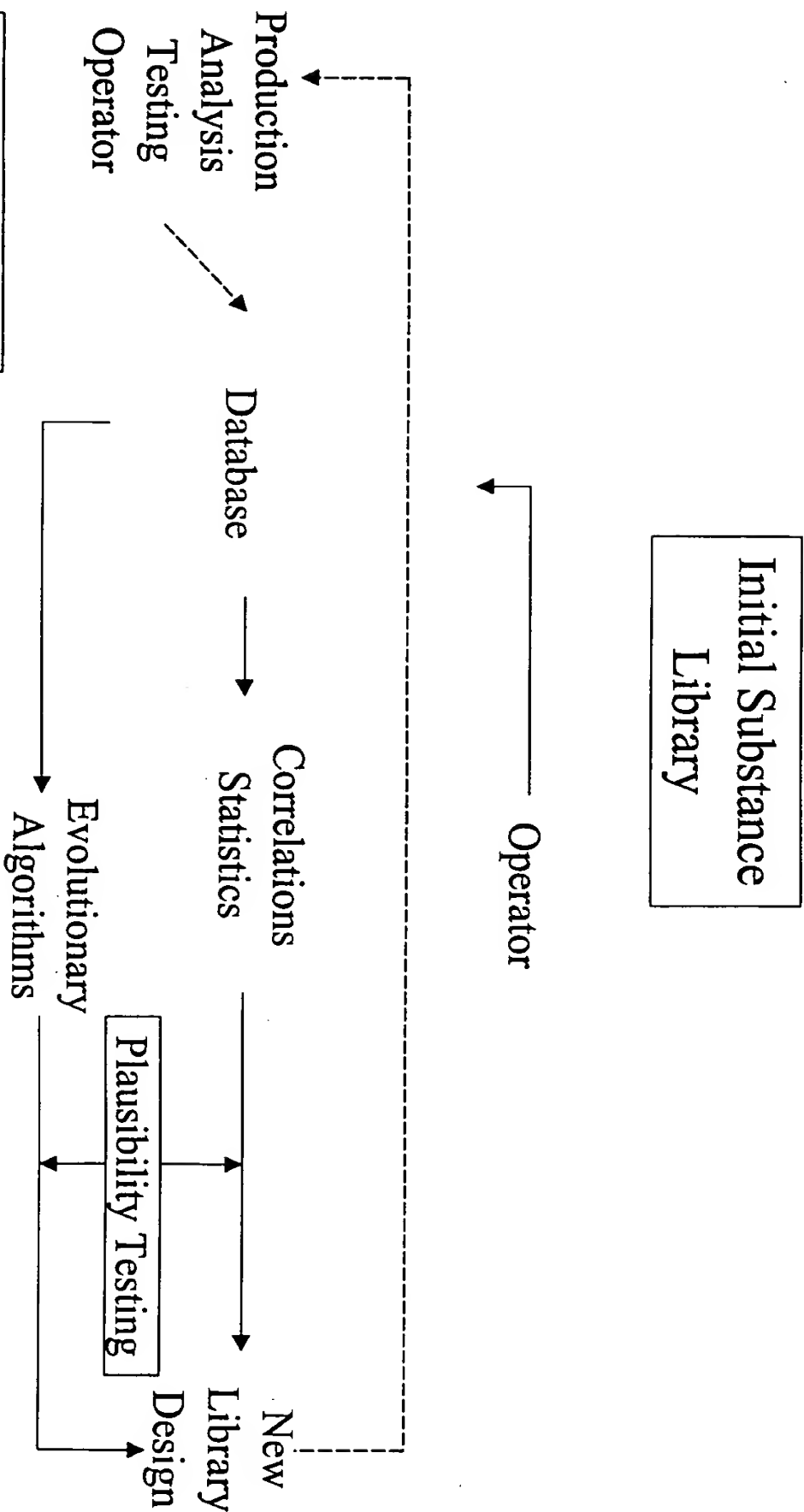
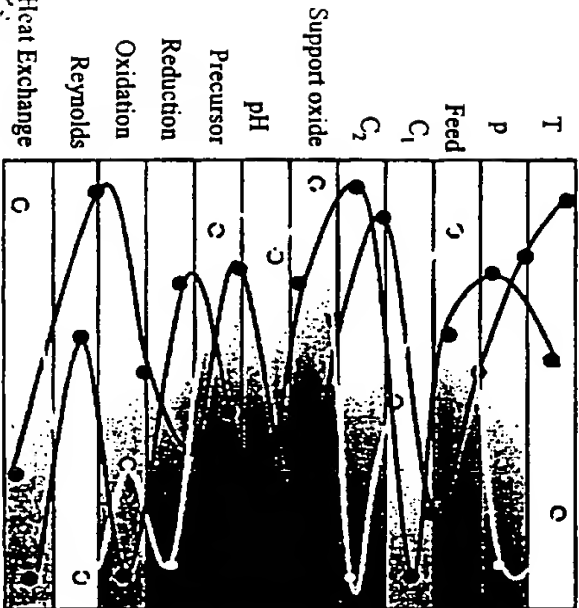


Fig. 3



# Original Library Design and Tests Using the Entire Parameter Space

Step 1: Design of Library, Test  
and Process Conditions



Step 2: Data Acquisition

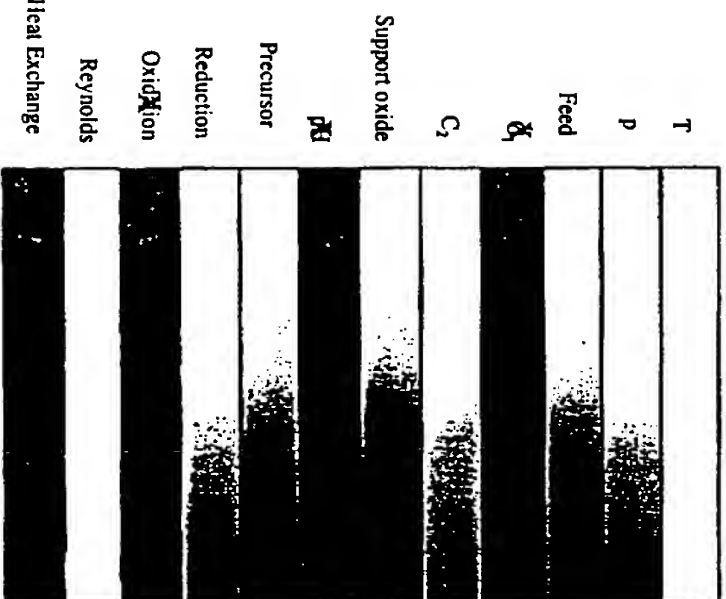
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T	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Feed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C <sub>1</sub>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C <sub>2</sub>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Support oxide	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
pH	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Precursor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Reduction	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Oxidation		<input type="checkbox"/>	
Reynolds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heat Exchange	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Activity	++	+	+++
Selectivity	+	++	-

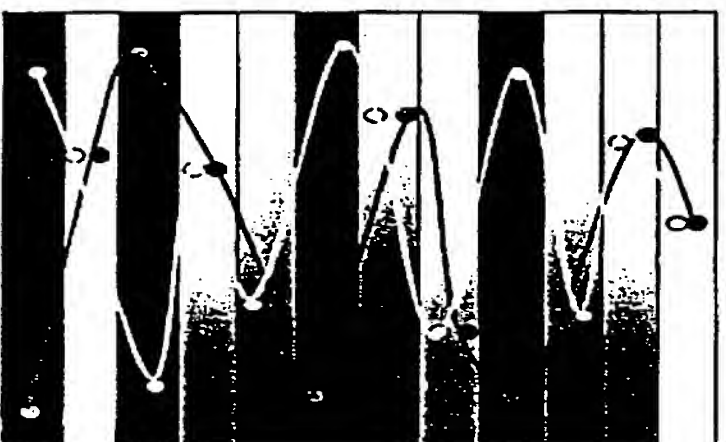
Fig. 5a

# Regression Analysis, Energies of the Parameter Space

### Step 3: Evaluation of the Significant of the Design and Test Parameters Regression Analysis



### Step 4: Test of the Regression Analysis



### Step 5: Amended Design of the Library, Test and Process Conditions

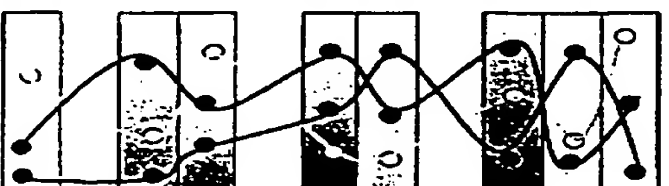


Fig. 5b

# Principle of Genetic Algorithms

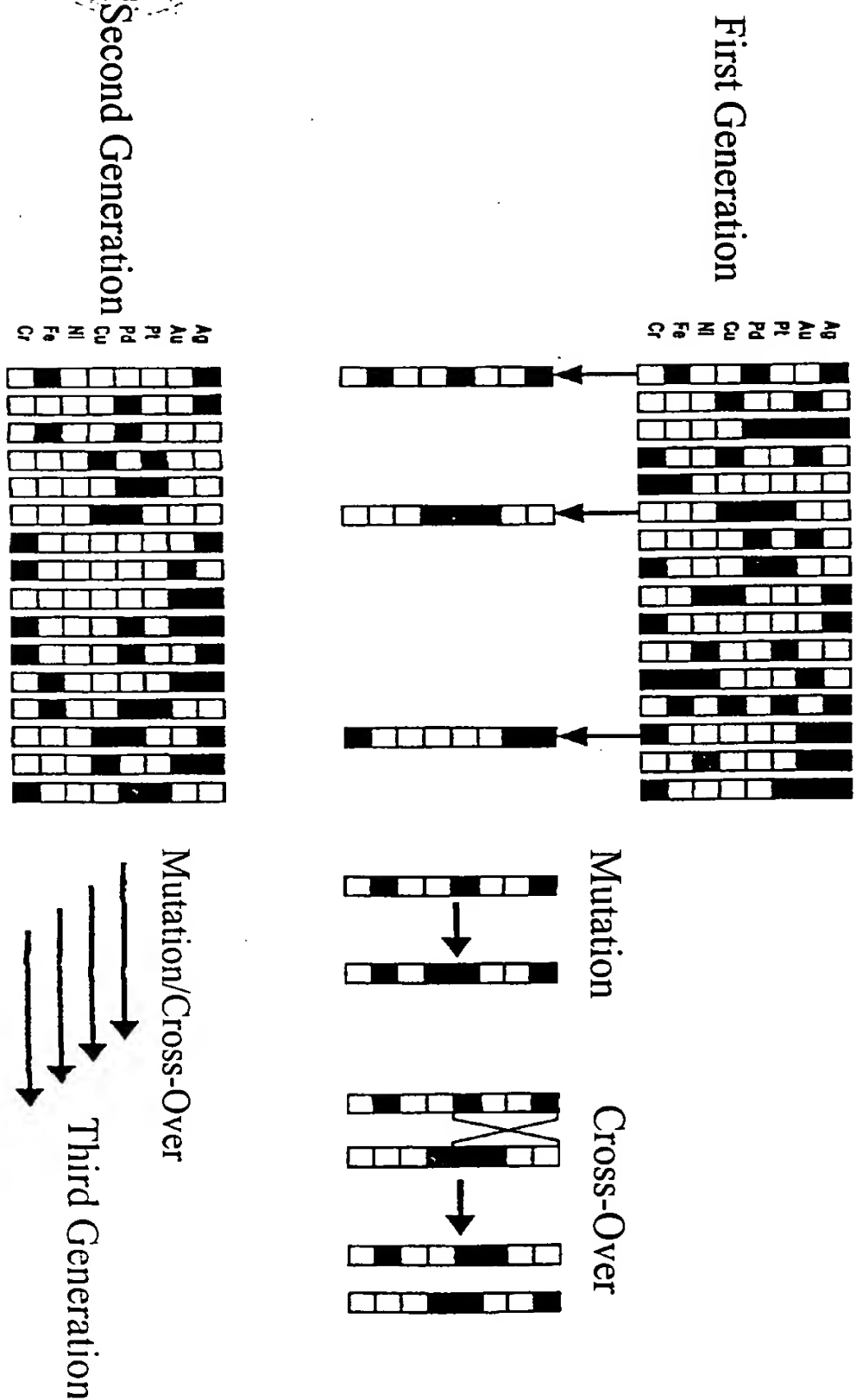


Fig. 5c

# Sensitivity Analysis of the Parameters of the Initial Library Pareto Diagram

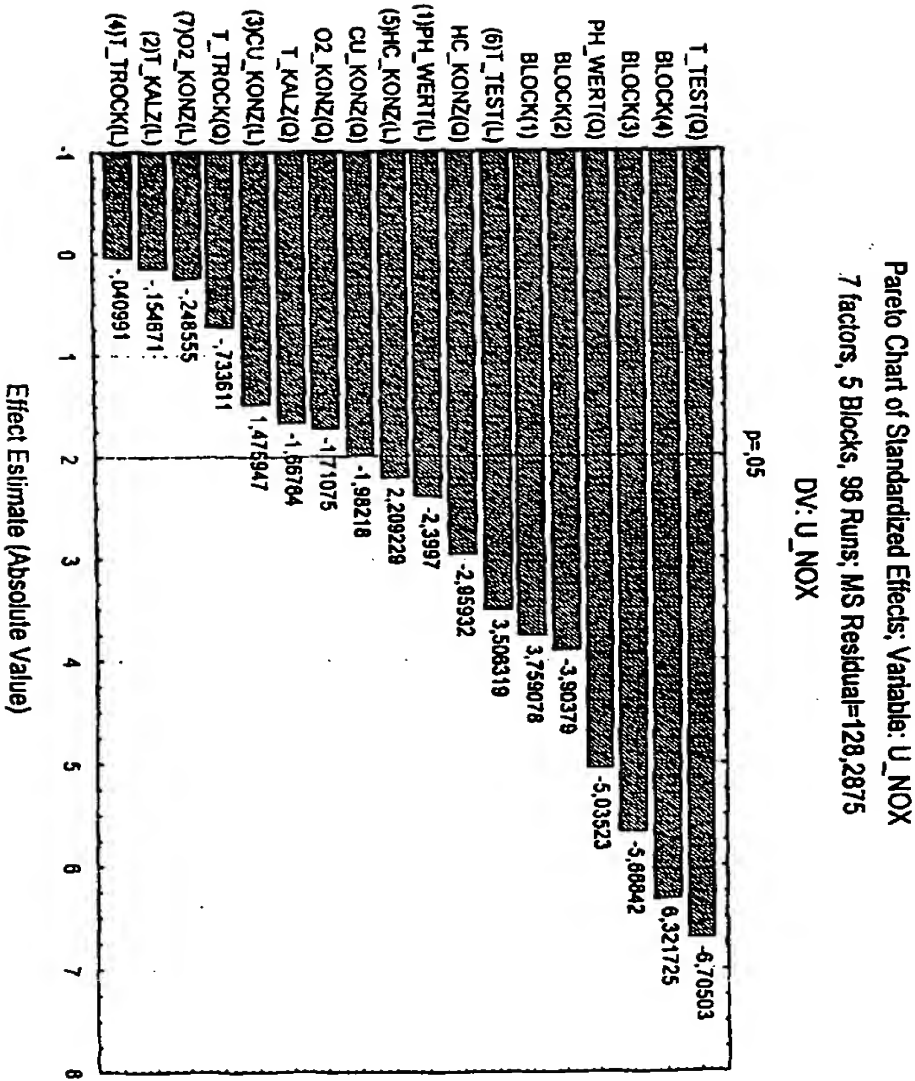


Fig. 6



# Sensitivity Analysis of the Parameters of the 1st Optimized Library Pareto Diagram

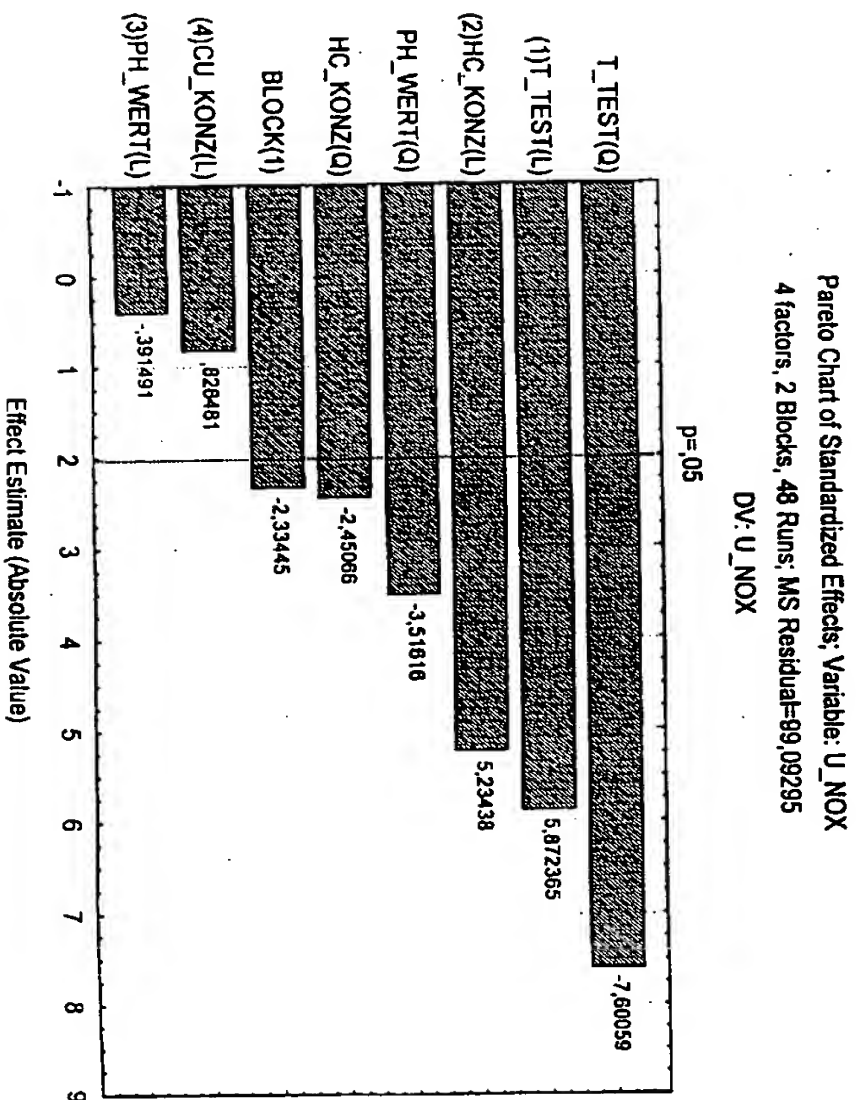


Fig. 7

